

SATURDAY, MARCH 21, 1874.

## ORIGINAL COMMUNICATIONS.

### THE ANATOMICAL, PATHOLOGICAL, AND SURGICAL USES OF CHLORAL.

*Read before the Pathological Society of Philadelphia, March 12, 1874.*

BY W. W. KEEN, M.D.,

Lecturer on Anatomy in the Philadelphia School of Anatomy.

#### I. ANATOMICAL USE.

IN August last, I think, I saw a scrap in a journal simply stating that chloral was an excellent antiseptic. I made no note of it at the time, and almost forgot it till I had a case of caries of the tibia (reported below) in which I desired such a disinfectant, and it occurred to me to try it. The result being satisfactory, when I came on duty at St. Mary's Hospital in October I tried it on a number of cases (some of which are reported below), and then tried the following experiments with it in my office with a view to its possible use in the dissecting-room.

*Experiment I.*—October 22, 1873, I placed some mutton with pure water in a bottle, corked it loosely, and stood it on my office table, exposed, say, to an average temperature, day and night, of 65°, as a comparative experiment. In four days it smelt very badly, and in seven was disintegrated.

*Experiment II.*—Same date. Mutton in a solution of chloral, gr. ij to f3j of water, and exposed to similar conditions. November 1 (ten days), slight mould. December 8 (forty-eight days), slight smell. December 25 (sixty-five days), entirely decomposed.

*Experiments III. to VI.*—Mutton placed in similar conditions October 22, 1873, but in chloral solutions of respectively 5, 10, 20, and 60 grs. to f3j of water. At this date, March 12, 1874, 141 days, or nearly five months, they are all perfectly preserved, with no smell save that of mutton-fat and chloral, no mould, no disintegration. A microscopic specimen from that in the five-grain solution is exhibited to the Society, to show that the muscular structure is perfectly preserved, as are also all the others.

*Experiment VII.*—A condyloma, removed December 24, was washed for twenty-four hours in water, and placed, December 25, 1873, in a forty-grain solution. It is still (March 12, 1874) perfectly preserved, and with the other specimens is exhibited to the Society for inspection.

*Experiment VIII.*—Feeling encouraged by some success, I obtained a fetus, still-born at full term, and injected it December 10, 1873, as follows: one arm, by the brachial artery (precautions being taken of course to limit the injection to the arm), with a five-grain solution; the other arm with a ten-grain solution; one leg, by the femoral artery, with a twenty-grain solution; the other leg with a forty-grain solution; and, by the umbilical cord, the trunk and head with an eighty-grain solution. I

used in all two ounces of chloral, and of each solution I injected as much as I could, so that the skin was fully stretched, as if the part were extremely dropsical. I had here a completely comparative experiment, for all the parts of the fetus were exposed to precisely similar conditions save the strength of the injection. I left it exposed on a table in a room of average temperature of 50° to 60° Fahr. March 10, just three months later, I examined it carefully. The body appeared perfectly preserved. The skin was shrivelled a little about the finger-nails, lips, eyelids, and scrotum, from evaporation; the toes were as plump as ever; the epidermis was slightly loosened. The head and neck, which were very much congested and discolored when received (a consequence, doubtless, of its being still-born), were of the same dark color, but no decomposition had ensued; and the common toilet-pins with which I had closed the incisions by which I reached the arteries were perfectly untarnished. On opening the parts injected with five-, ten-, and forty-grain solutions, and examining them, they appeared as firm as ever, all of natural color and consistence, and the microscope ( $\frac{1}{2}$ ) showed no change in the muscular structure even with the five-grain solution. In order, however, to have a more careful examination, I gave Dr. J. G. Richardson a scrap of muscle from the ball of the thumb in the five-grain arm, another from the twenty-grain thigh; a slice of the tongue, which, as the mouth was open, had partly dried, but was covered with a cheesy coating (hence, probably, the torula reported below), and a piece of the parotid gland. He kindly examined them with great care, with a  $\frac{1}{8}$  in. immersion lens, eye-piece A, giving 1250 diameters, and reports as follows: "A small piece of muscular tissue from the palm of the hand (five grains), teased out in a drop of chloral solution, showed the individual fibres with remarkable distinctness, the transverse striations being unusually well defined, and the whole structure quite free from granular or other degenerative change. (The specimen was shown by the class microscope.)"

"A similar fragment from the thigh, injected with a twenty-grain solution, was likewise admirably preserved."

"A thin section from the tongue exhibited muscular fibres in the same state of complete preservation; and in these, by the aid of acetic acid, the oblong and rectangular nuclei under the sarcolemma were clearly brought into view. A minute shred snipped out from the upper surface of the tongue displayed the filiform papillæ very distinctly, and furnished numerous cells of tessellated epithelium, presenting all the characters of epithelium in a drop of fresh saliva. Multitudes of isolated torula spores and a few short chains of torula accompanied this section."

"A thin section from the parotid gland showed the lobules of the glandular tissue almost unaltered, and, on the addition of acetic acid, the usual sharp definition of the nucleus in each gland-cell was obtained."

(An incision was made into one leg, and the above gross appearances were shown to the members.)

I have coated one arm with varnish and the other with rubber dissolved in benzole. I propose, after having exhibited it here to-night, to place one leg in a bag of saw-dust and the other in a bag of sand, and leave the remainder of the body exposed to evaporation during the next few months of hot weather. This will give me the means of determining whether the chloral will preserve the subjects in hot weather and of testing the best means of preventing evaporation. The results I will communicate to the Society in the fall of this year, whether they be good or bad, together with the results of any other experiments.

*Experiment IX.*—A negro subject was brought to my anatomical school February 23, 1874, in good condition as to preservation, but with the entire spinal cord removed, one leg off above the knee, and one femoral artery opened. It was therefore a very unfavorable subject to begin on, as so much of the solution must escape through, at least, the small arteries, which were cut. A half-pound of chloral, in the strength of 15 grs. to f3j of water, was injected by the carotid the same day. The body was placed on the dissecting-table March 2, and has been almost entirely dissected since then. The cuticle was very firmly adherent. The muscles were of the most life-like color, a little flabby perhaps, but not in the least easily torn. All the other parts, also, were of the natural color, texture, and condition, so that, for example, the aortic and other sympathetic plexuses were readily dissected. The odor of chloral was perceptible, but not at all offensive. March 7, the viscera were removed, and, instead of the usual fetid odor, which is so annoying, especially from its persistence on the hands, there was scarcely any smell. It was but slightly that of chloral, and was not disagreeable. This was twelve days after the injection. (Specimens shown.)

*Experiment X.*—A negro died in the city February 18, and lay exposed during the warm weather we had then till February 28, when he was brought to my rooms. The cuticle was off over all the chest, which was green and crepitant, and the legs were dropsical. A more unfavorable subject for preservation I have rarely had. Though a large man, I tried the chloral, on February 28, in the same strength and amount as in the last case, viz.: gr. xv to f3j. March 12, *i.e.*, twelve days after injection and twenty-two days after death,—the subject is perfectly preserved. The cuticle elsewhere is adherent, the chest is natural in color, the smell is gone, and the specimen of muscular tissue which I exhibit, though taken from the abdominal walls, the most unfavorable part of the body, is of admirable color and consistence.

The next subject I obtain I shall inject with one-fourth of a pound of chloral, and instead of the ordinary amount of water (a gallon to a gallon and a half), I shall dissolve it in not less than eighteen or twenty pints—that is, about five or six grains to 3j; for my short experience seems to show that if the parts are fully and most completely distended they are preserved better, probably because the chloral

penetrates more thoroughly into every minute capillary. In order to give a little more firmness to the muscular tissue, I shall also inject a pound or two of starch, dissolved in water and mixed with the chloral solution, and make a future report of the results.

It is important that I should not be understood to claim, as yet, that chloral will answer for the dissecting-room, to the exclusion of everything else. I have not had any experience beyond the mild winter we have so far had, and during a period of five months. What effect the hot weather of summer, with its moisture, will have, I cannot yet say, but hope to do so in the fall. Thus far I can claim for it entire superiority, in the winter-time, for all dissections, and especially for the finer and more delicate ones of the skilled anatomist. Its comparative merits may be summed up as follows:

1. *Cost.*—The price of chloral is about two dollars and fifteen cents per pound; and if one-half or one-fourth of a pound will do for each subject, the cost will be from one dollar to fifty cents for each subject. Chloride of zinc, or arsenic, costs about fifty cents for each subject.

2. *Condition of the tissues.*—Zinc hardens, discolors, and decolorizes the tissues to such an extent that, for both dissection and operative surgery, they are rendered totally unfit to give a student the proper notion of their normal color and consistence. Besides this, many parts, such as the axilla, with its entanglements of blood-vessels, nerves, muscles, glands, etc., important to be well dissected, are in such a discolored, dirty condition as hopelessly to bewilder the most earnest student. Alcohol is better than zinc, but it also hardens and decolorizes. Arsenic, also, is better, but the tissues become very soft and offensive in a little while, besides the frequent annoyance of local poisoning about the fingers. Salt and nitre subjects have the same objections (except the poisoning), and also nearly always mould in a short time. Chloral keeps the color perfectly, and the parts are of their natural consistence for at least three months, and probably much longer. By this means far more delicate and useful dissections can be made, and the student has a correct idea of the condition of the parts just as they were in life.

3. *Subsequent injections* into the arteries, etc., can be made with far better effect, since none of the arteries are at all contracted as they are by the astringent action of zinc; and the injection will therefore penetrate much farther.

4. *Permanent preparations.*—I have not yet had time to try this question, and so I do not know how it may act as to heat, moisture, vermin, etc.; but so far as finer dissections and finer injections are concerned, it would seem to promise well.

5. *Odor.*—The chloral odor, in a single subject, is not strong enough to be disagreeable, but how it may be with a roomful of them I am not prepared to say. I intend, however, to try the effect of some of the essential oils, such as cloves, bergamot, rosemary, etc., or a mixture of them; for a fragrant cadaver may entice some otherwise indifferent students to a more thorough study of its texture and tissues.

6. *Instruments and clothing.*—The destructive ac-

tion of zinc\* in dulling the edge of the best knives, and thus worrying the dissector by the constant use of the hone, or, more frequently, making him careless and slipshod, is well known. Chloral does not affect the knives in the least; and even toilet-pins, after three months in the subject (Exp. VIII.), were not corroded in the least.

## II. PATHOLOGICAL USES.

Besides the experiments detailed above, I asked Dr. Richardson to examine some pus, which I obtained from the Philadelphia Hospital through the kindness of Dr. Miller, on March 4, 1874. The following is his report, the examination being, as before, with the  $\frac{1}{5}$ :

"*Experiment XI.*—A specimen of pus from an acute abscess, preserved for six days in a five-grain solution of chloral, contained multitudes of well-formed pus-leucocytes, numerous dead (at least motionless) Bacteria from  $\frac{1}{20000}$ th to  $\frac{1}{2000}$ th of an inch in length, and considerable quantity of granular matter.

"*Experiment XII.*—A specimen of pus preserved six days in a twenty-grain solution presented precisely identical appearances; and since the Bacteria were about equally numerous, it seems probable that they had developed in the purulent fluid before it was mingled with the solution of chloral. On adding acetic acid or aniline to these specimens of pus, the ordinary reactions were manifested,—i.e., the brightening of the nuclei or tinging of the nuclei and the cell-walls."

My own examination coincided with his.

*Experiments XIII. and XIV.*—I examined pus from a chancre, and also pus from an ulcer, with precisely similar results.

These experiments, as well as those given before, but especially the microscopical results as determined by Dr. Richardson and myself, at once suggest the query whether chloral in solution may not replace alcohol in the preservation of permanent wet preparations in our anatomical and pathological museums. It will be observed that the solutions varied from five to eighty grains in strength; the specimens were mutton, a condylomatous tumor, human muscular, epithelial, and glandular tissues, pus from an abscess, an ulcer, and a chancre; the time varied from six days to one hundred and forty-one days; the conditions were unfavorable for their preservation: yet not only were they all preserved macroscopically, but even the delicate cellular tissues were preserved microscopically; and, further still, the Bacteria already developed were killed even by a five-grain solution. Whether this preservative power will hold good for all sorts of wet preparations, for a longer time and in hotter weather, I do not yet know, but it will certainly do so for those named for five winter months, and probably longer.

If we can use it in place of alcohol we gain very greatly, first, in the lessened expense; for a solution of ten or twenty grains to the ounce is far less expensive than alcohol, and the bottles, instead of

being hermetically sealed, need only be closed by glass stoppers, or even by ordinary corks. Secondly, this renders them entirely accessible for study at any time, whether in investigating any particular subject or specimen or for exhibition to a class; and any teacher who has used permanent preparations, hermetically sealed in expensive bottles, which cannot be passed from hand to hand, which are distorted by the refraction of the liquid and the round glass, and not to be got at to examine accurately what we wish to study, well knows how comparatively useless they now are, and how useful they will be if chloral should make them accessible. If evaporation take place, the solution is meantime becoming stronger, for only the water and not the chloral evaporates; and an annual or semi-annual inspection of the museum, with the addition of either water or the chloral solution, will remedy any such trouble. I do not think that chloral in solution changes chemically within at least a year. I have used in some of my experiments solutions in water nearly six months old, and have had patients take the syrup from an old bottleful obtained a year before, without any perceptible change in its action.

In pathological investigations of various fluids, such as pus, urine, blood, the fluids in dropsy, etc., a few grains put into the fluid may be sufficiently preservative, and enable us to keep them for a much longer time for more careful observation. I would suggest that about five or ten grains to an ounce of the fluid would be enough; and it would be better to add it in crystals, for if added in solution it might change the specific gravity of the fluid, and so affect the integrity of the more delicate morphological elements. I would also suggest whether a solution of proper density—varying with the objects to be preserved—might not be of great service for mounting microscopical preparations. Neither of the last two suggestions have I tried myself, except with the pus, which has kept perfectly for eight days; but both are, I think, well worth the trial.

## III. SURGICAL USES.

When I commenced my investigations into the action of chloral, I had seen nothing published but the little scrap which filled out a column in a journal, although since then I have seen several notices of its surgical applications.† Yet, as my observations are independent in character, confirm the results obtained by others, and show the value in surgery of a remedy as yet new, I venture to append a few of the more striking cases in which I tried it; in some with good results, in others bad. It acts, first, as a complete deodorant within a very short time, by what chemical action I do not know; secondly, as a stimulant, so that what was a foul, sluggish ulcer will become, in from two to three days, a fine, red, healthy, granulating sore. But it must not be used too strong, or it may become a decided irritant, as any one who has ever taken a dose would naturally expect. I have generally

\* Zinc being our most common injecting material in Philadelphia, I use it mainly for comparison.

† London Lancet, August 30, 1873, p. 311; Amer. Jour. Med. Sci., October, 1873, p. 531, and January, 1874, p. 261; Med. News and Lib., February, 1874, p. 27; Phila. Med. Times, February 19, 1874, p. 326, etc.



found that gr. x to f $\frac{3}{4}$  of water (or, in private practice, some fragrant water) is quite strong enough. In some cases even this, which is about a two per cent. solution, is too strong, and has to be diluted. The results of the cases below were most marked in those with foul, unhealthy, ill-smelling discharges, which were changed quickly to healthy-looking sores, with excellent and yet moderate, not abundant, pus. In fact, in every case the discharge was, I think, considerably diminished. I did not find, I think, that the sores healed any more rapidly than they ordinarily would. The application seemed rather to change an unhealthy sore which was stationary, or even enlarging to a healthy one, in the proper condition for the healing process, which soon began and went steadily forward. In no case was its hypnotic action shown.

Whether it will at all destroy the specific poisons, such as that of a chancre, I do not know, for I had no opportunity to try it in the hospital. That it would do well in open buboes, as ulcers, I have no doubt; but the best test as to its possible destructive powers on the virus would be to try the auto-inoculability of a chancre which had been treated by chloral dressings.

I have found the mucous membranes also, as would naturally be supposed, more sensitive to its irritant properties than the skin, but not so much so in some cases as would be expected. In fact, I think it must be tested by experience in each individual case.

*Cases I. and II.*—One, a case of long-standing caries of the tibia, with very ill-smelling discharge; the other, of caries of short duration, but equally bad discharge. I used the chloral (gr. x to f $\frac{3}{4}$ ) both as an external application, by which alone nearly all smell was prevented and discharge diminished, and later, in the same strength, as an injection into the sinuses. The injection did not irritate, but yet did no appreciable good other than the external application had already done, though continued for nearly a month.

*Case III.*—A case of psoas abscess (in which for four years the woman had worn a truss by a physician's direction, for a supposed hernia!). On admission, the abscess was discharging, in the groin, a very offensive pus in large quantities. A ten-grain solution was applied externally, and the odor completely disappeared at once, greatly to her own comfort, as well as that of the other patients in the ward. The discharge also certainly lessened, but I scarcely think it could be from the external application. It must have been from some other cause! As other injections had proved irritating, and she was rapidly sinking, I did not try the effect of an injection of chloral.

*Cases IV. and V.*—Two cases of large, filthy, and foul ulcers of the leg. I used a ten-grain solution as both a wash and a dressing; in one case mixed with a poultice, in the other simply by a compress, wet with the solution. The poulticed case did so well that all smell disappeared, the ward was freed from its previous contamination, and the ulcer did well. In the other case I had tried transplantation of skin, and four out of seven grafts had taken root. The continual application of the ten-grain solution on the compress was certainly too strong, for it not only destroyed the skin-grafts, but irritated the adjacent skin considerably. Generally, however, I have not found the constant dressing with the ten-grain solution too strong.

*Case VI.*—Rupial ulcers, of about the same size, on

the leg and arm. As a comparative test, I applied a ten-grain dressing of chloral to one, and touched the other with nitrate of silver, dressing it with simple zinc ointment. They did about equally well.

*Case VII.*—This was, I think, the best test of all, so far as the deodorizing properties of chloral are concerned. I do not say *disinfecting properties*, for I suppose that this is a question for the chemist rather than the surgeon. A young woman was infected by her husband with syphilis, and then he attempted a mercurial treatment. He so far succeeded that when she entered the ward, as I was making my visit, I found half of the teeth out, the rest ready to drop out, the gums sloughing everywhere, and necrosis both of the upper and lower jaw so far progressed that the upper jaw was loosening from all of its attachments. The smell was, I think, as bad as any I ever encountered, and the whole ward was filled with it in a very short time. I gave her a ten-grain solution of chloral as a mouth-wash, and on my visit the next day I could approach within six or eight inches before I was conscious of any odor. Yet the cause of the smell was constant, and the use of the wash intermittent. It was so grateful to her that she used it every fifteen or twenty minutes. The remaining healthy mucous membrane was not irritated. No hypnotic effect was visible from either absorption or the small amount probably swallowed.

*Case VIII.*—Gonorrhoea. In only one case of this kind have I tried chloral. I directed a one-grain solution, which so irritated the urethra that the patient would not allow its further use; but he was nervous about it, as I had inadvertently told him what I intended to use, and I scarcely trust his report. Parona,\* however, reports an extensive use of it since 1870, in men and women, with the best results, in a strength of one per cent., i.e., about 5 grs. to f $\frac{3}{4}$ .

My friend Dr. Macpherson has tried it in several cases, and reports to me as follows:

*Case IX.*—Cauliflower excrescences of os uteri, with large hemorrhages and great fetor. During thirteen months he had tried numerous remedies. The only effective deodorant was potass. permang., and this, even in so weak a solution as gr.  $\frac{1}{2}$  to f $\frac{3}{4}$ , would irritate the parts so as to re-establish bleeding. He used chloral, gr. v to f $\frac{3}{4}$ . The odor was at once destroyed, no bleeding resulted, the discharge lessened greatly, and changed its character to good healthy pus; pain was relieved, and she became able to walk about in ten days.

*Cases X. and XI.*—Both of long-standing ozaena in scrofulous subjects. A solution of  $\frac{1}{2}$  gr. to f $\frac{3}{4}$ , by the nasal douche, proved irritating, and they were indisposed to allow further trial.

*Case XII.*—Syphilitic condylomata on the penis. The smell was almost intolerable from the mingled odors of the smegma and the condylomata. After washing with water, a ten-grain solution of chloral was applied, and the odor entirely removed. A slight balanitis occurred, which subsided on reducing the solution to 5 grs. The warts were removed, chromic acid was applied, chloral being used as a dressing, and the patient was well in four days, except one very small spot, which soon healed.

*Case XIII.*—Non-specific severe vaginitis in a child 4 years old, of strumous constitution. An injection and wash of 4 grs. to f $\frac{3}{4}$  was used, and no other treatment, and in two days the patient was nearly well.

Dr. Goodell also informs me he has used it considerably of late, and it does admirably as an antiseptic, deodorant, and stimulant.

\* Med. News and Lib., February, 1874, p. 27, from Med. Times and Gazette, January 3, 1874, from Giorn. Ital. della Mal. Vener., October, 1873.

## SKIN-GRAFTING.

BY R. J. LEVIS, M.D.,

Surgeon to the Pennsylvania Hospital and to the Wills Ophthalmic Hospital.

THE operation of skin-grafting is now conclusively accepted as one of the resources of surgery. The utility of the transplantation of minute pieces of skin to granulating surfaces has been demonstrated in a vast number of instances. It is admitted that by creating centres of eccentric cicatrization on extensively ulcerated surfaces the rapidity of the healing process can be much increased. Ulcers of a chronic character, which have obstinately resisted cicatrization in a concentric direction, can be healed by the ingrafting of new centres of germination in the midst of the areas of ulceration. Experience has also shown that the procedure is applicable to plastic surgery, in facilitating the cicatrization of surfaces denuded by gaping, in the division of cicatrices, and in the sliding of flaps of integument.

Besides the increase in the rapidity of healing, due to extending the lines of cicatrizing edges, a decided and important physiological influence is exerted by the presence of the grafts on ulcerated surfaces. The surface of an indolent ulcer seems to be stimulated to renewed vital action, and the increased healing impulse even influences to active termination the peripheral limits of an ulcer in which granulation has long entirely ceased.

The utility of skin-grafting has, in my observation, been in no instances more demonstratively shown than in cases of extensive denudation caused by destruction of skin, as in burns, and of loss of large areas of integument from traumatic injuries. In the case of a man whose back was extensively charred at a lime-kiln, while lying under the toxic influence of its emanations, the sloughing integument having left an immense area of ulceration over his dorsal and lumbar regions, the successful engrafting of numerous minute pieces of skin healed the vast ulcer with astonishing rapidity. In an instance of the entire loss of the skin of a leg, caused by deeply burning with coal oil, which had filled a shoe and saturated a stocking, the healing process was by the same procedure rendered as surprising and satisfactory.

It seems now probable that amputation, which, as a final resource, is by surgical authority justified in certain cases of extensive ulcers of the leg which all expedients have failed to heal, may be substituted by the simple device of skin-grafting.

All of the conditions essential to successful skin-grafting I have not, after extended observation, fully determined. The most favorable condition for the development of the grafts is certainly that of healthy, active granulation of an ulcer; and the more nearly this state is approached, the greater, as a rule, will be the success. The grafts, however, occasionally fail, for incomprehensible reasons, on surfaces of perfectly healthy granulation; and yet I have repeatedly succeeded in developing such healing centres in the midst of ulcers of general unhealthy aspect, even where ulceration was actively

spreading at the circumference. An instance of effective grafting on an unhealthy surface was once illustrated to me on one of a number of chronic syphilitic ulcers of rupial character located on the arm.

As an illustration of ineffectual grafting on a healthy surface of granulation, I recall the case of a young woman, admitted to the Pennsylvania Hospital, whose almost entire scalp was torn off by her hair being caught in the cog-wheels of the machinery of a factory, leaving an exposed surface of pericranium. I failed, after many attempts, in inducing grafts to retain their vitality. The granulating surface was in a healthy condition, and grafts, more than one hundred in number, from the patient's own skin and from that of several other individuals, were repeatedly tried without success. The experience I have had since that case was under my control would now induce me to try grafts taken from *another scalp*, as it seems that grafts from similar localities, as from one eyelid to a loss of integument or a plastic operation on a corresponding part, retain their vitality almost certainly. I may here, however, remark that the transplantation of hair-follicles has, I believe, in all experience, uniformly failed.

The influence of the grafts in vitalizing the surface of chronic ulcers may be demonstrated by consecutively repeating the transplantations as the process of granulation becomes sluggish, each grafting exciting a renewed healing impulse, and preventing the tendency to relapse into indolence until the entire surface is cicatrized. I am inclined to think that with this kind of persevering repetition there must be few chronic ulcers, whatever may be their condition or location, which cannot be healed.

One of the beneficial claims for skin-grafting is with reference to the avoidance of the eventual contraction which disfigures, deforms, and impairs motion after extensive loss of integument. Observation seems to show that where cutification is rapid from a number of skin-forming centres the resulting cicatrix is less violently contractile in its tendency.

Some operators have experienced disappointment in the grafting procedure, on account of the liability of the newly-healed surfaces to a rapidly destructive ulceration under slight disturbing influences. I have seen a number of illustrations of the susceptible and readily-perishable nature of the rapidly-healed spaces. In one case of extensive and rapidly-healed surface, I saw the whole delicate cicatrix seem to dissolve and disappear almost within the period of a single day, during the existence of a general feverish exacerbation violently affecting the patient.

The delicacy and susceptibility of the newly-formed tissue are merely incidental to its neoplastic character; and the practical lesson to be impressed is the careful avoidance of local and constitutional influences that may destroy it.

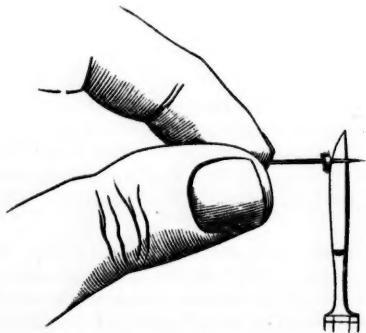
In regard to the previous preparation of the surface of a chronic ulcer for the reception of skin-grafts, the more nearly it is brought to a normally

granulating condition the more likely is success to follow; nevertheless, much reliance may alone be placed on the vivifying influence of the simple presence of the grafts on indolent surfaces.

For successful skin-grafting, it is simply essential that a minute portion of skin be removed from a sound part of the body of the patient, or from another individual, and placed on an ulcerated surface. It is customary to take the pieces to be transplanted from the patient's own skin; and I have generally chosen locations where the derma is thin, and not densely covered with cuticle, as on most of the front of the body, and, as a choice, from the inner surfaces of the arms and thighs. Grafts from the integument of other individuals develop as readily, and I have frequently practised removing them from limbs amputated for traumatic injuries, with apparently equal success. To avoid the possibility of conveying some form of specific infection by the process, it is certainly, as a rule, most advisable to transplant only from the patient's own skin.

A graft of skin should merely consist of the simple structures of cuticle and derma, and should avoid the underlying fatty and connective tissues. That even the whole thickness of the derma is not essential, is demonstrated by the fact that successful grafting has been effected by using mere scrapings of the cuticle, in which are contained some cells of the superficial or papillary layer of the derma; but the practice is uncertain, and has not practical merit. The thickness of the true skin on the front of the body, it should be borne in mind, does not average more than from a quarter to half a line, and this depth should never be exceeded in the removing of grafts.

The operation of removing the portions of skin for grafting may be done by a knife or scissors, cutting off minute particles of the size to be used immediately in transplanting; or by taking a larger piece which is to be afterwards subdivided. I formerly practised the removal of skin for grafting by seizing the skin with delicate forceps and snipping off a piece with small scissors, using the fixation forceps and curved scissors of ophthalmic practice. The fragment removed was then spread on any convenient surface, as on the flat extremity of the

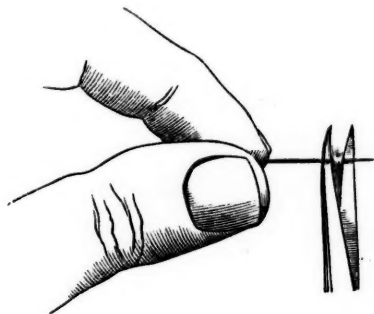


handle of a scalpel, and subdivided into pieces varying in size from that of a grain of canary-seed to that of a grain of rice.

To facilitate the detaching of pieces of skin on the above plan, Mr. Bryant, of Guy's Hospital, London, has devised an instrument in which the forceps and scissors are combined, and which accomplishes the object at a single movement.

During the last year I have adopted a method, first suggested to me by Dr. C. H. Thomas, of this city, which, for simplicity, convenience, painlessness, and effectiveness, may well displace all others.

It consists, as seen in the cut, in merely penetrating the cuticle with a very delicate sewing-needle, elevating a small point, and shaving off the minute elevation of cuticle and upper stratum of derma with a very sharp knife. The same may be accomplished, but hardly in so perfect and painless a manner, by using fine scissors for the excision of the portion transfixed.



The operation, if properly performed, should be free from really painful sensation, and patients never object to its most frequent repetition. I have frequently done it without more than a tint of discoloration from blood, and blood need never actually flow from the very minute wound.

The graft is then immediately pushed from the point of the needle, and placed on the surface of the ulcer, the only care being to lay it with its epidermic surface upward. The graft need not be inserted into the granulating surface by making a wound for its reception, as has been advised and practised, for such puncture allows a flow of blood that may elevate the graft from contact with the granulations.

As simple adhesion of the graft is all that is desirable, I have sometimes, with large and actively secreting surfaces, allowed them to be exposed to the desiccating influence of the atmosphere, so that the secretion may become viscid and hold the transplanted particles securely in position. To facilitate the same object of fixation after the grafts are deposited, I have occasionally allowed the ulcerated surface to remain uncovered until they became well agglutinated to it.

All active medication to the ulcer should be avoided, and the surface of ulceration be simply covered with a light dressing, for protection from disturbing influences. For this purpose the ulcer may be covered with a piece of muslin, saturated with oil or covered with cerate, or it may be merely protected with the waxed tissue-paper, such



as is extensively used for general purposes of a dressing in the Pennsylvania Hospital.

On most ulcers the dressing need not be removed for two or three days after the operation; but when secretion is profuse, the ulcer may be washed daily, by allowing a stream of water to flow over it, carefully avoiding the wiping of the surface with sponges or cloths, which may disturb the grafts.

One of the earliest changes noticeable in the graft, after the first few days, is the detachment of its cuticle, which may occasionally be seen floating in the secretions of the ulcer, or it may be detached by a slight touch, leaving the true germinating material fixed in position. The graft, as it commences development as a germinal centre, becomes so blended and identified with the granulations as to be for a time almost lost sight of, its reappearance becoming evident in a bluish or lilac-tinted pellicle, which indicates the progress of cutification.

In regard to the size of grafts for transplanting, I have, in several instances, grafted by removing from recently amputated limbs pieces of skin measuring one-third or one-fourth of an inch square; but such large pieces are very likely to fail in retaining their vitality, and I have had much more satisfactory success with quite small grafts; and, for reasons already stated, this latter practice is certainly the best.

The number and position of the grafts will vary in accordance with the size of the ulcerated surface; and in large ulcers they may be distributed at short intervals, both centrally and near the periphery. Those near the circumference will stretch their granulations outward and stimulate the borders of the ulcer to activity; and, with regard to the advantage of centrally-located grafts, it will be well to remember their importance with reference to the difficulty often experienced in eventually healing the last of a chronic ulcer. A large ulcer, on which successful grafting has been performed, will soon present islets, from which cicatrization progresses in directions of the nearest healing-points, until all are joined by an interlacement of newly-formed tissue.

## NOTES OF HOSPITAL PRACTICE.

### JEFFERSON MEDICAL COLLEGE.

CLINIC OF PROF. S. D. GROSS, M.D.

Reported by J. B. ROBERTS, M.D.

#### SPONTANEOUS ANEURISM OF ONE OF THE BRANCHES OF THE DORSALIS PEDIS.

DAVID T., a colored man, aged 59 years, presents himself at the clinic with a tumor about the size of a small bird's egg, situated upon the external aspect of the dorsum of the left foot, and which he first observed four months ago. The tumor shows no discoloration, is without adhesions to the surrounding tissues, and appears to be connected with the thecæ of the tendons going to the toes; in fact, it resembles very much the ganglion, or cystic tumor, so often found in connection with the extensor tendons of the hand.

Upon more critical examination, however, there is perceived distinct pulsation, which is rather too evident and too diffused to be caused by transmission of im-

pulse from an artery lying immediately below the tumor, although I have seen a number of instances where a ganglion situated over the radial artery has had the pulsation of that vessel imparted to it, so that it was at first mistaken for an aneurism. In this case, however, I am nevertheless inclined to believe that the tumor is not a cyst of the sheath of the tendons, but an aneurism involving one of the branches of the dorsal artery of the foot; for the *dorsalis pedis* itself cannot be involved, because the swelling is external to it; and hence one of its tarsal branches must be dilated.

Spontaneous aneurism of the arteries of the leg and foot is very unusual, and there is probably no case recorded where such an affection has been observed connected with the *dorsalis pedis*; though a number of instances of traumatic aneurism in this situation, particularly after venesection, have been reported.

An exploring-needle is introduced into the tumor; and the withdrawal of the instrument being followed by an escape of blood seems to confirm the diagnosis of aneurism.

It is necessary to undertake some form of operation for the cure of the affection, if it be an aneurism, because, should the patient meet with an accident causing rupture of the sac, he might bleed to death before surgical assistance could be procured. Pressure will, accordingly, be made by an assistant upon the femoral artery to arrest the current of blood, and then the tumor will be laid open with the knife; which is readily effected by carefully dividing, upon a grooved director, the overlying tissues until the tumor has been reached. The amount of blood which escapes from the incision in the tumor as soon as compression upon the femoral artery is relaxed reveals conclusively the true nature of the case, and shows the tumor to be aneurismal.

It seems impossible to separate the sac and trace out the artery by which it is supplied, and hence it becomes necessary to ligate the anterior tibial, which is accomplished by extending the incision upward, and passing a ligature around the vessel just above the ankle, where it lies between the tendons of the extensor longus digitorum and extensor proprius pollicis muscles. There is still copious hemorrhage proceeding from the recurrent circulation, which is dependent upon the perforating branches of the plantar arteries; and from the great number of ligatures required to arrest the bleeding, it would appear that the tumor has somewhat the character of an aneurism by anastomosis.

The hemorrhage, after a good deal of difficulty, has finally been controlled, and the wound will now be covered with cotton saturated with Monsel's solution, and the patient carefully watched lest hemorrhage again supervene, necessitating some further operative procedure.

This man, who was before the class a week ago, did well until to-day, when copious secondary hemorrhage occurred, necessitating the temporary introduction of three pins to arrest the bleeding.

With the assistance of Professor Pancoast I shall now try the effect of ligating the anterior tibial some distance above the point of the old ligature, which came away this morning; and then, if hemorrhage continues from the wound after these pins have been removed, it will be proper to cut down upon the part, and, making a large flap, endeavor to control the bleeding by tying the small vessels. Should this be found impossible, it will be necessary to amputate the foot, for it would not be advisable to attempt ligation of the femoral artery, since the vessels are so atheromatous and fragile that the ligature would probably separate prematurely, and the patient die from immense secondary hemorrhage.

By means of a curvilinear incision here at the lower

third of the leg, I come upon the artery about three inches above the joint, and without much difficulty pass the aneurismal needle under it, and tighten the ligature. Upon removing the pins introduced this morning, but upon which I was afraid to depend, the hemorrhage does not recur, and therefore I shall not do anything further to-day, but have the man well watched, that the occurrence of bleeding may be immediately recognized.

I have this morning, gentlemen, to announce the death of our patient with aneurism of the foot, who was before the class two weeks ago, when, as you remember, I applied a second ligature to the anterior tibial artery. This ligature was removed on the ninth day, and the man seemed to be doing quite well, with the exception that he had a severe chill on the eighth day, and that there was considerable sloughing of the wounds. He, however, died last night, and the post-mortem examination shows both wounds filled by granulations, and one of them with a slough; the anterior tibial, as well as the femoral arteries, ossified, pus in the joint, and the heart fatty, with slightly atheromatous valves. As the man had been very stupid for some time, I thought death might have been the result of embolism of the cerebral arteries; but the autopsy gave no evidence of clots in the brain, and I therefore attribute his death to pyæmia.

*EXCISION OF ONE-HALF OF THE HARD PALATE FOR THE REMOVAL OF AN ANGEIOMA.*

Mary McK., 6 years of age, from the State of Wisconsin, was attacked about eighteen months ago with frequent hemorrhages from the mouth, proceeding from the gum between the molar teeth on the left side of the upper jaw, and which were at times only arrested by the application of styptics.

About a year ago an operation was performed, which proved ineffectual, for, within the past few months, bleeding has recommenced and the tumor has been gradually increasing in size, accompanied with pain in the cheek and ear, but without any recurrence of nasal hemorrhage.

This tumor is an angioma, resembling the nævus that occurs in the skin, but is not an aneurism by anastomosis, which is occasionally developed in connection with the upper jaw and in the maxillary sinus, because it does not exhibit pulsation synchronous with the beat of the heart. It is impossible to determine whether or not this growth involves the antrum, for, although there is apparently no complication of the nasal cavity, the tumor may entirely fill the antrum of Highmore and be encroaching upon the nares.

An incision is made from the commissure of the lips, extending about three inches outwards towards the ear, in such a manner, however, as to preclude the occurrence of injury to the facial nerve and the duct of the parotid gland. This external wound is rendered necessary by the size of the tumor, the removal of which through the mouth would be impracticable. The facial artery, which has been divided, is secured by a ligature, and the flap dissected back to give sufficient room for the performance of whatever operative procedure may be required to extirpate thoroughly the morbid growth.

This disease appears to involve the palatine process both of the superior maxillary and the palate-bone on the left side, but without having invaded the antrum of Highmore; and therefore the excision of half of the roof of the mouth will be necessary to effect complete removal of the diseased structures. In order to accomplish this, the bone-forceps are introduced—after the incisor teeth have been extracted—into the anterior nares and the mouth, to cut through the alveolar process and the hard palate near the median line, and,

when this has been effected, are again applied so as to separate the palatine process from the body of the maxillary bone.

There is considerable hemorrhage, resulting from the division of the posterior palatine artery and the numerous smaller vessels in this situation, which will be controlled by applying styptics and plugging the antrum with cotton saturated with subsulphate of iron. If bleeding from the posterior palatine artery persists, it can be arrested by the application of the actual cautery; for the ligation of the vessel, situated, as it is, so far back in the mouth, would be impossible.

Here is the little girl from whom, two weeks ago, was removed half of the roof of the mouth on account of a tumor which was at intervals the seat of hemorrhage. After the bleeding from the wound was controlled, the edges of the incision were approximated by sutures and adhesive strips, and the patient placed upon iron, quinine, and stimulants. She has convalesced quite rapidly, and purposes going back to her home in a few days, though it would be better if she were able to remain here some time longer, so that should the growth show any tendency to reappear, which is not at all improbable, the actual cautery could be employed to arrest it.

*EPITHELIOMA OF THE RECTUM.*

G. M., 57 years of age, has suffered for about two years with an obstinate diarrhoea accompanied with intense pain and tenesmus, and occasionally with copious hemorrhage from the bowels; and latterly the fæces, when passed, have not exceeded in diameter the size of an ordinary lead-pencil.

The symptoms presented by the patient point towards the existence of a carcinomatous stricture of the rectum; but in order to establish the diagnosis it is necessary to make a digital examination of the bowel, which is readily done by inserting the finger, previously oiled, through the anus by a rotatory motion. At the distance of two and a quarter inches from the verge of the anus a growth is distinctly felt, forming an irregular ring around the entire circumference of the bowel, leaving only a small aperture in the centre. This is, therefore, a case of epithelioma, or scirrhus, as it was formerly called, of the rectum, which has caused by its growth an annular stricture, through which the fecal matter escapes with great difficulty.

This is the most frequent form of cancer occurring in the ano-rectal region, for the other varieties of carcinoma have been very rarely seen in this situation. The disease is usually met with in elderly subjects, but sometimes the patient suffering with this malignant affection has not attained even adult age.

In its advanced stages the disease presents characteristic symptoms, being attended by sharp, lancinating pain, difficult defecation,—though the calls to evacuate the bowels are exceedingly frequent,—and the passage of mucus, blood, and pus from the rectum. Frequency of micturition occurs from reflected irritation of the bladder; the distention of the bowels with fæces and gas gives rise to colicky pains; the fæces, when passed, are flattened in form and of small diameter, and the countenance of the patient gradually assumes the carcinomatous cachexia.

The treatment of carcinoma of the rectum is of necessity only palliative. Billroth, of Vienna, and several other surgeons, have excised the rectum for the removal of the malignant growth; but the operation is attended with profuse hemorrhage, and seems a barbarous and unjustifiable procedure, since there is so little probability of any ultimate advantage accruing from its performance.

Great relief of the symptoms can often be obtained



for a considerable length of time by breaking down the stricture with the finger, as I do in this case, or by the forcible insertion of a bougie. The finger is the safer method of effecting this object, because the operator has more control over the amount of pressure exerted, and is less apt to cause rupture of the bowel, which unfortunate complication would necessarily be followed by peritonitis and almost certain death of the patient. The only other treatment is the employment of tonics and anodynes, together with the administration of soothing and detergent enemata, in order to render the condition of the patient as comfortable as possible.

## TRANSLATIONS.

**PSEUDO-MUSCULAR HYPERTROPHY** (Dr. Ludwig Schlesinger, *Wiener Med. Presse*).—The first publications relative to this malady appeared in 1838, in Naples, containing the histories of two cases of a peculiar disease of the muscular system, in which there was a diminution of the power of the muscles, accompanied by an increase in their volume.

From time to time narratives of similar cases appeared in the journals; but no one attempted to give any theory relative to the origin of the disease until 1861, when Duchenne called more particular attention to it, and referred it to some cerebral affection. As he had no opportunity of observing the disease, except in children, he suggested the name "paralégie hypertrophique de l'enfance de cause cérébrale" for it. To him belongs the credit of first calling the attention of the medical world to it, and since that time about one hundred cases have been placed on record. In most of these cases, in addition to records of the clinical phenomena observed, microscopic examinations of small pieces of muscular tissue were made, and in some cases records of the post-mortem appearances were kept; but, owing to the striking discrepancies in the results of these observations, up to the present day no unanimity in regard to the exact pathology of this disease has been reached. While some observers, relying upon the conditions noticed at autopsies, being struck by the wide-spread changes both in the peripheral nerve-trunks as well as in the spinal cord itself, support the theory that the origin of the disease is to be found in pathological nerve-changes, others of equal eminence do not countenance this view. The idea of a cerebral origin has been given up by all, even by its originator, Duchenne. A like difference of opinion exists in regard to the condition of the muscles, as to whether the atrophy of the muscular fibres is the first factor in the pathological change, and the growth of the interstitial tissues is consequent upon it, or whether the latter condition should be looked upon as the cause of the former: not long ago, Friedrich, of Heidelberg, published a valuable monograph on "True and False Muscular Hypertrophy," in which he endeavored to prove the identity of progressive muscular atrophy with pseudo-hypertrophy, regarding both affections as results of chronic myositis, one being distinguished from the other only by unimportant modifications of the results of a hyperplasia of the interstitial connective tissue.

Upon examining the numerous cases reported under various names, it is found that they, with but few exceptions, present a common type.

In most cases the process begins in the earliest youth. In but few is it found to originate at the time of puberty. There is frequently found a hereditary predisposition, and it but rarely commences in adult life. The children affected are, for the most part, those who have been weak from their birth and have developed slowly. The parents notice that at the age when children are usually

able to walk, they have not even made attempts at progression; and when later, in their fourth or fifth year, they do begin to walk, they fall readily, and their gait is unsteady. Soon there is noticed increase in the volume of some of the muscles, usually first in those of the calf, and this is accompanied by contraction of the tendo Achillis, from which results a drawing-up of the heel. Gradually the muscles of the thigh and loins, sometimes also those of the upper extremities, increase in size, while at the same time other muscles of the trunk or arms become atrophied. The loss of power of the muscles stands in marked contrast to their increase in volume. In a short time curvations of the spine develop, and, as the disease progresses, the power of standing and of locomotion is lost, the patient is no longer able to make the simplest movement, he cannot turn himself in bed; and he remains in this condition until death occurs, either from paralysis of the diaphragm or from some intercurrent pulmonary trouble.

Microscopic examination in most of these cases reveals simple atrophy of the muscular fibres, with an enormous increase of the interstitial, fatty, and connective tissue. In a few of these cases it is found that the muscular fibres have almost entirely vanished, and have been substituted by fatty tissue. The wide-spread degeneration noticed in the nervous system has been previously mentioned. This type of the disease, as related above, has been noticed but rarely in adults,—only four or five times.

Auerbach and Berger, in Breslau, have recently published notes of four cases which are markedly distinguished from the usual type both in their clinical history and in their structural lesions. In all four of these cases the disease was consequent upon an injury, and affected the muscles of but one limb; in one case the muscular tissue of the right arm alone being involved, in the other three that of the left leg. The functional changes were by no means so marked as in the typical cases; in place of a total loss of the power of motion, only a diminution was noticed. The microscope revealed in these cases a true hypertrophy of the muscular fibres, but the excessive growth of the interstitial tissue was wanting.

These two observers seem to look upon these cases as belonging to the category described above, and regard them as cases in which a false hypertrophy may develop through the disappearance of the hypertrophied muscular tissue and the growth of the interstitial tissues.

Schlesinger recently had the opportunity of observing a patient who had been sent to the hospital on account of some mental disease, but in whom he also found some hypertrophy of the muscles of the left side. By a microscopic examination he found the muscular tissues of this man much diseased, and he thinks himself justified in concluding that the disease in this case started in the muscular fibres, and that the interstitial tissues were secondarily involved. Whether the process was simply an inflammatory one of the muscle, or whether there was primarily some alteration of the nervous system, cannot be decided; but he is inclined to the opinion that the disease was a chronic inflammatory process of the muscular substance. The results of his observations lead him to a different conclusion from that maintained by Auerbach. From the circumstances that he failed to find any muscular fibres which were hypertrophied, and that he did find evidences of disease in fibres of normal size, Schlesinger concludes that in the case which came under his notice there was no stage of true hypertrophy.

W. A.

DR. J. H. SAUNDERS reports (*Canada Lancet*, March 2) a case of recovery without vomiting in a man who had swallowed an ounce of chloroform.

PHILADELPHIA  
**MEDICAL TIMES.**  
 A WEEKLY JOURNAL OF  
 MEDICAL AND SURGICAL SCIENCE.

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*We invite contributions, reports of cases, notes and queries, medical news, and whatever may tend to increase the value of our pages.*

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### EDITORIAL.

#### THE ANNUAL OVERFLOW.

NEXT week the profession will be more numerous by some hundreds than it was before the colleges flung open their doors and let the anxious crowds come out. The profession grows in numbers by the annual increment, but does it grow in power? We fear not. As the addition of new links of imperfect workmanship lengthens but weakens a chain, so, it seems to us, does the yearly growth increase but weaken the profession. It appears to be in the first place indisputable that the influence of the profession, so far from growing stronger, really lessens with age. To-day, in circles where formerly the physician was held in high esteem, he is looked upon as a puzzle, a problem, a *lusus naturæ*, a something removed from the common humanity; and in other circles of power regular medicine, quackery, imposture, and ignorance are jumbled into a mass, and the profession is weighed by the general average.

The reasons of the declension of physicians in public esteem are no doubt manifold; but the roots of all these causes seem to us to take life upon Commencement day. In the yearly outpouring of semi-educated men is furnished the leaven that is leavening the whole lump.

We are not of those who believe there are any real differences in the schools. It is in our judgment "six of one and half a dozen of the others." An incident which came under our notice will serve as an illustration of the evil, and is not an

unfair example of the workings of the present system of education. Mr. — was a cooper by trade; he was an excellent workman. Merrily from early dawn to dusky eve he drove the hoops home on the great molasses-hogsheads, or deftly fitted the staves of the whisky-casks. By thrift and toil he prospered and became a master-cooper, and then, by shrewdly making his bargains and industriously working with his men, he acquired sufficient property to render him independent of his week's or month's labor. But times grew dull: molasses-hogsheads were not wanted, whisky-casks were a drug, even flour-barrels were at a discount. One day, as our hero was walking along the streets, pondering with sunken head upon this sad state of affairs, he heard a bell ring, and, looking up, he saw before him a large building, and on inquiring was told that it was a medical college, and that the bell had been rung not for an auction but for lectures. A brilliant idea seized him, thrilled him to the marrow, and almost took his breath. He would become a doctor. Wasn't it better to be Dr. Smith than Cooper Smith among his neighbors? Wasn't it easier to feel pulses than to wield the adze and the mallet? So said, so done. In two years the garments of the cooper were shaken off, the pompous roll of the Latin had awakened its echoes in the cooper's soul, and the robes of medicine had been put on. We do not wish to be misunderstood, or in any way to sneer at honest labor or at small beginnings. A man may rise from the peasant's hut to the sublimest height of intellectual power and deserved fame; but he rises only by steady, persistent efforts,—efforts whose sources are the in-born instincts of his soul, and not the offspring of exoteric circumstances. Our cooper was a cooper still; cooper in intellect, heart, and soul, but doctor in law and doctor by authority. He had earned his degree by attending lectures and paying his fees; by dint of coaching by young physicians who had brought their art to such perfection that they could tell almost to a certainty the questions which would be asked in the green-room,—by dint of such coaching he had been able to resist the pin-scratches officially made to test the candidate's knowledge, and he was by right and by law a doctor. His fitness may be gauged by the fact that shortly after his examination he came in great glee to one of his coaches, stating that some unfortunate wretch suffering from chills had come to him for treatment; that he wanted to give quinine, and would the doctor please write a prescription, that he might copy it?

American practitioners of the better class are

equal, we firmly believe, as practitioners, to any in the world; but many of them acquire their knowledge and skill *after* graduation, and many of them, though skilful practitioners, fail entirely in those public duties by the manner of whose performance the profession is judged: not educated during their student life in hygienic medicine or in medical jurisprudence, and having little call for such knowledge afterwards, too often a judicial investigation or a public discussion of a hygienic problem is simply a public disgrace of the profession. When coroners' physicians in our largest cities make such judicial examinations that their testimony is ruled out of court, when the absence of contention and strife between doctors is the rare exception in court proceedings, how can the public judge otherwise than they do? More than this, owing to our system of manufacturing doctors, great numbers of the ignorant enter the profession; many of them finally to go back to their cooper-shops, some of them to achieve practical success and to build up remunerative practices. We doubt not that some of our readers will remember a doctor of this town who accumulated a competency, although "stumick" was the key-note of the English of his prescriptions. The colleges as at present organized are in very truth the enemies of the profession. The colleges, we say,—not the faculties: we are willing to grant that they do their duties conscientiously.

We know that many of the professors see with the clearness of propinquity the sources of evil and sadly acknowledge the gravity of the trouble. Yet they are powerless to alter or reform: the instruments of an organization, they are responsible only for the method in which they perform their assigned duties. The demand made upon them by some of the profession that they change the system has seemed to us ludicrously unjust, if not absolutely impudent. This may appear strange to some; but, as our columns are crowded, we must leave the development of our reasons for another issue.

## CORRESPONDENCE.

### THE BIDDENDEN MAIDS.

TO THE EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

THOUGH these ladies may not have figured in the pages of "scientific" journals, they have long been famous in print, as well as in local tradition. I find at least three accounts of them in books on my library shelves: in Chambers's "Book of Days," vol. i. p. 427; in Brande's "Popular Antiquities," vol. i. p. 166; and in Timbs's "Something for Everybody" (Lon-

don, 1861), p. 54. All these authorities quote Hasted's "History of Kent" (published in 1790), in which the story is shown to be a "vulgar tradition," without historical foundation. Hasted says that "the truth seems to be that it [the bequest] was the gift of two maidens of the name of Preston; and that the print of the women on the cakes has only taken place within these fifty years, and was made to represent two widows, as the general objects of a charitable benefaction." In the year 1656 the Rev. W. Horner, rector of the parish, claimed the lands as a part of his glebe, but failed to get them; in the pleadings preserved in the church, the names of the ladies are said not to be known.

It is worth mentioning, by the by, that, according to the tradition, the "maids" were connected both at the shoulders and the hips, having only one pair of arms, but two pairs of legs.

The costume of the figures on the cakes is of the time of Mary: "open bodices, laced, Vandyke ruffs, and sleeves slashed at the shoulders," with the head-dress of that period.

W. J. R.

CAMBRIDGE, MASS., February 23, 1874.

## PROCEEDINGS OF SOCIETIES.

### MEDICAL SOCIETY OF THE COUNTY OF ALBANY, NEW YORK.

SEMI-MONTHLY MEETING, FEBRUARY 18, 1874.

THE PRESIDENT, DR. JOHN SWINBURNE, in the chair.

#### A CASE OF NEPHRITIS.

DR. R. H. SABINE reported a case of nephritis. Mrs. V., æt. 29, of tuberculous tendencies, and the mother of five children, being very near the end of her sixth pregnancy, through the course of which she had been unusually well, accidentally struck herself on the knee; she was instantly taken with pains in the abdomen, which soon went to the back; they were continuous, but more severe at times, and she supposed them to be labor-pains.

A grain and a half of opium were given, and chloroform by inhalation, the opium being repeated in two hours. After this the pain took on more the character of that of labor; the os dilated fully in about five hours, and the fœtus, weighing about three pounds, was delivered by forceps. What were supposed to be after-pains were very severe, and opium was given again. Twenty hours after delivery she was found much exhausted. She had passed no water, and on using the catheter the bladder was found empty.

Next day she showed a puffy look about the eyes, a pallor of the face, and symptoms of uræmic poisoning. There was still suppression of urine. Cathartics and diuretics were administered; the former only operating. She finally passed into a condition of stupor, and died at the end of the third day.

*Post-mortem.*—The bladder was found empty and dry.

The kidneys were inflamed and enlarged, one of them weighing ten ounces. The uterus was contracted, and contained a dark offensive discharge.

The President inquired in how short a time death had been known to occur from congestion of the kidneys and suppression of urine. He had never known it to occur in less than three days. This is interesting in a



medico-legal point of view; a prominent physician had asserted on the witness-stand that a person going to bed at night entirely well may die before morning of uræmic poisoning. When such men make so strong an assertion, the matter ought to be investigated.

Dr. J. L. BABCOCK remarked that this depended on the amount of urea in the circulation. He gave the details of a case in which during four days not more than half a pint of urine was passed, in which the symptoms characterizing congestion of the kidneys were present; under salines and cups with hot fomentations to the back the patient improved and recovered.

Dr. F. C. CURTIS spoke concerning the part taken by the blow on the knee in the etiology of the affection of the kidneys in Dr. Sabine's case. He alluded to a case which he reported to the Society in May last (see *Medical Times*, vol. iii. p. 566), in which a patient in sound health met with a fall, hurting his head and back, followed immediately by symptoms of acute nephritis, resulting in death within three months. Dr. Brown-Séquard had written on this subject of external injuries producing disease of internal organs, by nervous sympathy probably. In many cases this point may be an important one.

Dr. C. D. MOSCHER said it was pertinent to inquire as to the effect of the opium given in this case. It is well always to make sure of the condition of the kidneys in the lying-in state before administering it, although it is generally given very indiscriminately. Opium, as well as chloroform and all anodynes, seems to aggravate an existing disease of the kidneys, and the continued use of anodynes before delivery may often bring it on.

Dr. JOSEPH LEWIS remarked that the tuberculous tendency, and in addition the pregnant condition of the patient, as reported by Dr. Sabine, would tend to hasten her death. He had observed in these cases a small quick pulse, a characteristic sweat, and a smell of urine about the patient.

He had never seen bad effects from opiates in either acute or chronic Bright's disease, when given with discretion—i.e., symptomatically—by a careful physician.

Dr. VANDERVEER said that he had given opium in some cases of albuminuria with pleasant results, and in others with the opposite. In one case of chronic albuminuria convulsions came on after the exhibition of opium, and in another he had seen forty drops of laudanum by enema produce coma and death. As to the length of time a patient lives with suppression of urine, he had a patient in May, 1866, of dissipated habits, who was sick three days and recovered; recently he had another attack, which lasted five days, when he died. Although he suffered great pain, but little opium was given.

The President said that a distinction should be made between acute and chronic inflammation of the kidneys. In the former there is no albumen at first in the urine, and in these opium is badly borne; in the latter there is albumen, and in it opium is better borne, but still not well. He had never seen recovery from a very severe attack of acute nephritis.

#### PUERPERAL INSANITY.

Dr. JOHN B. STONEHOUSE, JR., said that a consideration of puerperal insanity is interesting from the rarity of its occurrence, the absence or obscurity of its prominent symptoms, the difficulty of treatment, the uncertainty and often fearful termination of the disease. According to the strict significance of the term puerperal insanity, these remarks could refer only to those cases which occur during or within a few days or weeks after delivery; but by usage it has come to include instances of mental derangement originating during the periods of utero-gestation, parturition, and lactation. The late Dr.

Skae, in the Morisonian Lectures for 1873, published in the *London Journal of Mental Science* for October, 1873, abandons the term, and divides it into "puerperal insanity," insanity of lactation, and insanity of pregnancy. While the term is decidedly an inappropriate one, it is necessary to treat the cases together, because of the intimate connection of these three physiological stages and the almost inseparable connection of their etiology and pathology.

The most usual division of the subject is according to the periods of pregnancy, labor and its consecutive state, and lactation; another division is ephemeral insanity, melancholia, and mania. The latter classification is faulty, inasmuch as it does not take cognizance of the peculiar circumstances under which the disease is developed, and dependent upon which are the treatment and prognosis. We will then consider insanity and pregnancy, puerperal insanity, and insanity of lactation.

The period of pregnancy is understood to extend from conception to delivery; the period of labor to the end of the second month; the period of lactation from the second month after delivery.

Of the fifteen cases of puerperal insanity on which I found my remarks, thirteen were married women; ten were between the ages of twenty and forty; three were under twenty, and two had passed forty; eight were primipara, four cases occurred during the second pregnancy, one during the third, one the fifth, and one the eighth. The youngest was eighteen, the eldest forty-seven years of age. In four cases there were histories of heredity; the insanity in all cases having occurred on the maternal side. In five cases hereditary neuroses other than insanity were found; and in the remaining six no heredity could be traced. In six cases the patient had suffered from nervous disease previous to the attack, and in one case an attack of chorea ceased as the mental symptoms came on.

Two cases proved fatal: one from dysentery, and the other from maniacal exhaustion; four cases are at present in institutions, and considered incurable; nine recovered. Of the four incurable cases, one is in a condition of dementia, and the others are classed as suffering from chronic mania.

Of the fifteen cases, six occurred during pregnancy, three during labor, and the remaining six during lactation.

Now allow me briefly to detail the cases which appear to me to be representative of the several varieties, course, and termination.

*Case I.*—H. J. P., æt. 30, second pregnancy; married five years. Patient exhibited symptoms of mental aberration during the fourth month of pregnancy; fears of poverty and death, with perverted appetite,—craving raw meat, etc. Symptoms developed rapidly, and from the fifth month to the time of labor patient continued in a condition of extreme melancholia, without suicidal propensities. During labor, however, she exhibited considerable interest, and immediately took the child to breast, and to the close of lactation showed no other symptoms of mental aberration. The patient has suffered several times from very severe hemicrania. Parents and collaterals free from any nervous taint, whilst they are decidedly phthisical. This patient entered an institution during the fifth month of her pregnancy, and was discharged one month afterwards.

*Case II.*—G. S., German, æt. 23; married one year; primipara; during an instrumental delivery she became violently excited, and charged her husband with attempts to murder her by means of the forceps. Tried to choke the physician while applying the bandage. It became necessary to use the camisole, for the safety of the household.

Under medical treatment she quickly recovered her former mental condition, having been deranged and

under restraint about two weeks. She did not nurse her child. Is again pregnant. No heredity could be traced. No nervous affections in her previous history.

*Case III.*—D. H., æt. 39; married two years; first pregnancy; during utero-gestation patient was suspicious and apparently very religious. Was not considered by her relatives to be in sound mind. Labor not very difficult, nor marked by any special mental symptoms. During lactation, patient complained of headache in frontal region. Anæsthesia—partial—was noticeable for a few days at several periods. Mental symptoms increased in intensity. Several attempts at suicide occurred, and in the fourth week after delivery, by the advice of the family physician, she was removed to an asylum. A year has elapsed, and the patient is in a state of profound dementia. During the past summer she suffered from a severe dysentery, and became extremely debilitated; had bed-sores. Following this was an obstinate constipation, with atony of the bladder.

Late intelligence gives no hope of recovery.

*Case IV.*—L. F., of German descent, æt. 18; unmarried; first pregnancy; patient was from a wealthy family, eldest of eight children; three have suffered from epilepsy, two died in infancy from convulsions. She was first attacked when ten years of age. Her mother and several other relatives on the mother's side also give histories of nervous heredity, an aunt and a brother having died at an asylum, of epileptic insanity. The patient, being of weak mind and morals, fell an easy prey to a man much her senior. During pregnancy she exhibited no unusual mental symptoms. During labor, however, she became wild and incoherent in her talk. In the course of a week she was dangerous to herself and her attendants, requiring the use of the camisole continually. The fauces became extremely congested and swollen from the violent and constant screaming. Insomnia was almost unmanageable. Only while under the effects of the most powerful soporifics did she rest from her delirium. Forty-five grs. of chloral and one drachm of a saturated tincture of hyoscyamus would scarcely produce rest for half an hour.

Beef-tea, whisky-punch, and medicine were given either by stomach-pump or by enema, according to the excitement of the patient. Hypodermic injections of morphia, even to the extent of one-half grain, produced no effect, although repeated within an hour. On the thirteenth day after labor she died from exhaustion.

*Case V.*—M. E. P., æt. 27; married; primipara; family strongly nervous during pregnancy; premature labor was threatened twice. Labor was without any special unfavorable symptoms. In the fifth week of lactation she first exhibited signs of mental aberration; refused food; could not be induced to utter a word; fæces and urine were passed apparently without her knowledge. She sat in her chair with her hands upon her knees, her eyes cast upwards, and her mouth open. It became necessary to force alimentation and medication. Extreme insomnia and debility also further complicated the case. Under treatment she became steadily better until the third month of lactation, when she was discharged cured.

A few words as to the etiology of these affections. In Westminster and Queen Charlotte's, two large lying-in hospitals of London, among 5500 women confined, only twenty were attacked with the disease during their residence in these institutions, and in others the proportion has been small. These facts, however, do not show the whole number attacked, as the time spent in lying-in hospitals after delivery is usually very short, and women attacked with insanity during pregnancy are seldom if ever delivered at an institution.

Dr. Gundry, from collected cases, gives 1434 cases of puerperal insanity in 16,109 cases admitted to insane asylums.

Among the causes, hereditary predisposition appears to be the most important. This heredity, not only to insanity but to other nervous diseases, as it is important to remember, occurs generally on the maternal side. Dr. Macdonald reported sixty-six cases, of which seventeen, or about 25 per cent., gave histories of family predisposition. Dr. Gundry reports twenty-two out of fifty-six patients, or about 50 per cent., who were predisposed by heredity. Of my own cases, four were descended from families with undoubted taints of insanity, or about 33 per cent. This gives an aggregate of 137 patients, of whom forty-three were predisposed to insanity.

Constitutions enfeebled by alcoholic or sexual excess, or by organic disease, are predisposed to attacks of puerperal insanity.

Another important, but decidedly difficult, point to observe, is the moral and mental habits and surroundings of the patients; and perhaps it is well to notice here the fact presented especially by the French alienists,—that unmarried women are much more liable to attacks of puerperal insanity than married ones. The sad amount of illegitimacy which is said to have existed in Paris has added greatly to the numbers of the insane during the period under consideration. The injurious effects of painful emotions were so well known in ancient Rome that it was the custom to suspend a crown from the doors of houses where women were in labor, to indicate that such houses were to be held sacred from all intrusion.

It is difficult to estimate the effect of education and culture in this phase of insanity. Statistics on this point are meagre and unsatisfactory, but I think I may safely say that, allowing the manner of living in two cases to be equally conducive to physical health, the better-educated woman is the least liable to puerperal insanity.

Under this head may be classed those cases where the attack is immediately preceded, and evidently caused, by some powerful mental impression; and also many cases which arise during instrumental deliveries. Dr. Marce attributes puerperal insanity to the constitutional disturbance attendant upon pregnancy and the establishment of the lacteal secretion, and to the general shock to the nervous system which is the direct consequence of labor. Dr. Gooch's theory of its dependence upon the peculiar state of the sexual system which occurs after delivery, and Dr. Storer's reflex insanity, are both of similar explanation, and deserve careful attention in deciding the causation of the disease.

Another writer, in *Winslow's Psychological Journal*, gives a very similar explanation. He attributes the origin of the mental aberration "to reaction between a system predisposed to such derangements, and the normal physiological conditions which are found after confinement, just as in constitutions predisposed to tetanus or nervous delirium these will be developed after the slightest accidents or operations." The special influence of the physiological changes undergone by the uterine and nervous system is a very interesting field for study. During pregnancy new functions are assumed, new relations between the nervous centres and the growth and nutrition of the uterus are being formed. The not uncommon advent of diseases of the kidneys, lungs, etc., the change of habits necessitated by the condition of the patient, all culminating in the peculiar and supreme nerve-tension of the stage of labor, followed immediately, it may be, by exhaustive hemorrhage and the drain of lactation, form a chain of causes whose existence renders the escape of a single woman mysterious and providential.

Dr. Marshall Hall claimed for anæmia and exhaustion the principal places in the causation of puerperal insanity. Undoubtedly these conditions enter into

many cases, but the claim of Dr. Hall cannot be substantiated.

Sir James Y. Simpson raised the point of the connection of this disease with albuminuria.

The statistics of observers do not show any proofs of this theory, and in the three cases of my fifteen in which this question was investigated no traces of albumen could be detected.

The symptoms of the three varieties of puerperal insanity do not present any very characteristic points. Melancholia is most frequently the type of the disease in the period of pregnancy; perverted appetite, suspicious fears, and perversions of the moral element are often noticeable.

Dr. Bucknell says, "Every medical man has observed the extraordinary amount of obscenity in thoughts and language which break forth from the most modest and well-nurtured woman under the influence of puerperal mania; and, although it may be courteous and politic to join in the wonder of those around that such impurities could enter such a mind, and while he repudiates Pope's slander that 'every woman is at heart a rake,' he will nevertheless acknowledge that religious and moral principles alone give strength to the female mind, and that, when these are weakened or removed by disease, the subterraneous fires become active, and the crater gives forth smoke and flame."

Dr. Marce gives the case of a woman who became hydrophobic soon after conception; she could neither drink nor bear any one else to do so in her hearing, nor could she cross a stream of water.

Of 155 cases collected by J. Batty Tuke, 28 occurred during pregnancy, over 20 per cent. In my cases, 6 occurred during pregnancy.

Of 783 cases reported by Macdonald, Gundry, Marce, and others, only 65 cases occurred during utero-gestation.

Of Dr. Tuke's 158 cases, 73 occurred during the period of labor; of my 15 cases, 3 occurred during the period of labor.

The mental symptoms are generally of the maniacal type, and may be either ephemeral, occurring during the passage of the child from the os uteri or the os externum, or they may come on later and last longer.

In lactation, 54 of Dr. Tuke's cases occurred, and 6 of my own. The melancholic type predominates during this period.

Puerperal insanity is the most favorable for recovery, while the insanity of lactation is least so.

The prognosis is unfavorable when inflammatory conditions accompany or supervene upon the mental state, or when the strength of the patient is diminished by organic disease, exhaustive discharges, and maniacal excitement.

The treatment differs very little from that of other similar cases of non-puerperal insanity. When it is possible, narcotics should be avoided in the treatment of puerperal insanity, according to Sir J. Y. Simpson; warm baths and alcoholic drinks serving to quiet the patient and procure sleep. This is not always possible, and then chloral, bromide of potassium, conium, and opium, may be relied on. A useful combination is a solution of chloral with a saturated tincture of hyoscyamus or chloroform.

The non-appearance of the menses at the normal period should be considered as an indication for medication to the end. Tonics, stimulants, and nutritive articles should be given when called for by the condition of the patient. Blisters and other counter-irritants are often of the greatest service.

**TETANUS.**—Surgeon Bhawanee Doss records (*Indian Med. Gazette*) a case of tetanus arising from retained placenta, and successfully treated with hydrate of chloral.

## GLEANINGS FROM OUR EXCHANGES.

**ALTERNATIONS IN THE INTENSITY OF DISEASES** (*Popular Science Monthly*, March, 1874; from the French of Alphonse de Candolle).—Medical history proves, on the subject of epidemic and contagious maladies, a marked fatality at the time of their first appearance, followed by slowly decreasing violence from generation to generation. This diminution is not due to an alteration in the nature of the disease, but to the fact that, when an epidemic falls upon a population for the first time, the greater part of the individuals disposed to receive the disease are attacked and die in large numbers. Subsequent births are the offspring of persons who did not contract the disease, or, at the least, who contracted yet survived it; that is to say, of persons better constituted than others to resist the disease. By virtue of the ordinary resemblance of children to their parents or grandparents, the succeeding two or three generations will be less disposed to suffer from the epidemic; there will be a diminution in violence, or a temporary disappearance of the disease. In time this protective influence is exhausted, and a proportion of individuals arises in whom the malady will be severe, and among whom the law of selection will recommence to operate.

In general terms, heredity and selection must produce an alternation of intensity and relief in diseases. That variation must be more marked when the disease in which it takes place is fatal, and especially when it attacks youth.

Curative or preventive means which are sufficient in periods of light visitation lose a portion of their efficacy at the aggravated period.

This rule applies particularly to the use of vaccine as a preventive of smallpox, as is seen in the European population, which, having been slightly exposed to the smallpox after two or three vaccinated generations, found itself approximating to the conditions of a population in which the disease appears for the first time. The attack is not altogether so violent, but the return is evident; and all means of resisting it which would have sufficed fifty years since have become less efficacious.

**THE PREVENTIVE TREATMENT OF POST-PARTUM HEMORRHAGE** (*The Dublin Journal of Medical Science*, January, 1874).—Dr. A. H. McClintock calls attention to the fundamental principles governing the production of hemorrhage after delivery, viz., the muscular contractility of the womb, the state of circulation at the time of delivery, and the coagulable power of the blood itself. It is especially important to note the premonitory symptoms of the hemorrhage in question. Vascular excitement towards the end of gestation and during labor always forebodes hemorrhage. When the pulse is permanently rapid and jerking towards the end of labor, and whenever after delivery it ranges above 100, there is great risk of flooding. In the progress of labor, particularly in the second stage, the character of the pain affords a very reliable indication as to the probability of hemorrhage, which is likely to occur if the pains, instead of gradually culminating with a strong pain and subsiding, are sharp, quick, and cease suddenly, with long intervals in proportion to the length of the pains.

In adopting prophylactic measures, all that is required to secure the desired quietude of the vascular system is open-air exercise, abstinence from stimulants, and regularity of the bowels. The liquor amnii may be let off early in the second stage by artificial rupture of the membrane, thus rendering the uterine contraction more permanent and enduring by making it more gradual. The most effectual of all resources against post-partum flooding is ergot, which should be given some little time before delivery. Gallic acid and iron,



when the blood is inclined to be non-coagulable, have also been found to be of great service.

**CROTON CHLORAL HYDRATE** (*The Lancet*, January 31, 1874).—Mr. J. Burney Yeo, after a number of systematic observations, has come to the following conclusions:

1. In croton chloral hydrate we possess a remedy of remarkable efficacy in some cases of neuralgia of the branches of the nervus trigeminus. 2. It has also the power of affording relief in other obstinate forms of neuralgia. 3. It is of use in certain cases of diffused muscular rheumatism. 4. It has but little effect in purely rheumatic cases. 5. In cases of localized pain and other nervous symptoms which we find in the class of persons we are in the habit of calling hysterical, this drug is of little or no use. 6. Its efficacy in procuring sleep seems very variable in moderate doses. Two grains will produce sleep in some sensitive females, while ten grains will not even cause drowsiness in non-sensitive males. 7. It is very valuable in some forms of irritative and spasmodic cough, and there is scarcely any remedy likely to prove more valuable for the relief of the distressing night-cough of chronic phthisis.

The dose varies from one to ten grains. From two to five grains may be given every hour, or the smaller dose every half-hour, until fifteen grains have been taken. At present it hardly seems safe to go beyond that dose.

The subcutaneous injection of twelve grains in a cat produced, after prolonged unconsciousness, a series of epileptic convulsions and death.

**THE STYLOID MUSCLES AND ANÆSTHETICS** (*The Boston Medical and Surgical Journal*, February 26, 1874).—Dr. S. W. Copeland gives the following explanation of the irregular and obstructed breathing which so frequently occurs at a certain stage in the administration of anæsthetics, the patient being in the usual sitting or recumbent posture, with the head held back:

The styloid muscles are put on the stretch. The stylo-glossi draw the tongue backwards, the stylo-hyoides draw the os hyoides upwards, and the stylo-pharyngei raise the pharynx and thyroid cartilage upwards, all thus uniting to close the epiglottis. Pulling out the tongue will partially overcome the action of the stylo-glossi, while the other muscles will maintain their action.

If now the head be tilted forward, the styloid muscles are all relaxed, the tongue falls forward in the mouth, and the larynx falls into its proper place, thus leaving the epiglottis free and the glottis unobstructed, and establishing regular respiration through the natural channel of the nose.

**TURPENTINE IN PYÆMIA** (*The Lancet*, January 31, 1874).—Dr. J. Sinclair Holden relates the case of a workman in whom amputation of the fingers was rendered necessary by an accident. Gangrene supervened, a secondary operation was performed above the wrist, and was in its turn shortly followed by rigors, profuse sweats, sleeplessness, low delirium, subsultus, and stupor, the wound becoming sloughy and offensive. The man rapidly sank, in spite of free stimulation.

As a *dernier ressort*, half-drachm doses of turpentine were administered in egg emulsion every four hours. After the third dose they were discontinued, as the pulse and temperature had fallen and consciousness returned. The patient partook liberally of brandy and beef-tea, but on the following day all the asthenic symptoms reappeared, and the patient relapsed into a comatose condition. The turpentine was again had recourse to, and with the same happy effect. This time the improvement was permanent, and the patient made an excellent recovery.

**CEREBRO-SPINAL MENINGITIS** (*The Lancet*, January 10, 1874).—At a meeting of the Medical Society of London, Dr. Dowse read a paper on the above subject, and gave the following diagnostic table:

EPIDEMIC CEREBRO-SPINAL MENINGITIS.	SPORADIC OR BASIC CEREBRO-SPINAL MENINGITIS.
Attack sudden, without any special predisposing cause.	Attack commences gradually, and resembles an onset of acute rheumatism.
Apparently of a contagious or infectious origin.	Usually arising from exposure to cold, exhaustion, and privation.
Sensorium affected from the first.	Sensorium never affected until the last stage.
Excito-motor spasms of a tonic character in groups or groupings of muscles, with marked loss of cutaneous and muscular sense.	Incoördination of movement, with cutaneous formation, partial anesthesia, muscular hyperalgia, but no tetanic spasms.
Reflex movements common.	Reflex movements rare.
Vomiting urgent and uncontrollable.	Vomiting not so severe.
Temperature rarely exceeds 100°.	Temperature often rises to 105°.
Purpuric maculæ diffuse and general.	Maculæ never seen in the deau-date form.
Death usually takes place from coma.	Death usually takes place from apnea.
Prognosis grave.	Prognosis hopeful.
Post-mortem appearances reveal the membranes over the superior cerebral convolutions and posterior columns of the cord as the seats of lesion.	Post-mortem appearances reveal the membranes over the base of the brain and anterior column of the cord as the prime seats of lesion.

## MISCELLANY.

**GLYCERIN FOR PRESERVING FRUIT.**—We learn through a German journal that in order to preserve fresh fruits it is only necessary to heat them, if not perfectly ripe, in water almost to boiling, drain nearly dry, and cover with warm, concentrated glycerin. If the fruit is perfectly ripe, heating in water is unnecessary. It is also advised to pour off the glycerin after standing for some time, and add fresh concentrated glycerin. The glycerin poured off may be concentrated on a water-bath and used a second time. Ordinary glycerin is often impure, but only that which is perfectly pure and colorless, with a clean, sweet taste and a specific gravity of 1.25, should be employed.—*Journal of Applied Chemistry*.

**A MEDICAL LICENSE FOR LADIES.**—The King and Queen's College of Physicians in Ireland has determined to admit females to the examination for its diploma in Midwifery, which can be registered. The Royal College of Surgeons in England has the power of granting a license in Midwifery, which can be registered. If it would use this power in favor of women passing a fit examination, we might hope for some abatement of the scandal of midwives' midwifery, and see an experiment on a goodly scale of the fitness of women for midwifery practice, which we much question.—*The Lancet*.

**PRESERVATION OF FOOD BY GREAT COLD.**—M. Bousingault (*Comptes-Rendus de l'Acad. des Sci.*, January 27) states that a quantity of beef-tea having been submitted, eight years ago, to a temperature of -20° for several hours, has remained in perfect good condition up to the present time. Sugar-cane juice was at the same time subjected to this treatment, and was found to be in excellent condition. Both substances had, of course, been kept in closed vessels.—*Druggist's Circular*.

## NOTES AND QUERIES.

## HOSPITALS AND MEDICAL PROGRESS.

TO THE EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

It may be that you have correctly indicated "Some of the Uses of Hospitals" in a recent article,\* though in disposing so summarily of the part which provincial practitioners can and do play in medical progress it seems to me you have fallen into error. In my time, so far from medical progress emanating from hospitals, it has emanated more from the people than the profession.

The real spur to medical progress, if I have interpreted the signs rightly, is the patronage people bestow on irregulars and patent medicines. This would not be the case were the people satisfied with the ministrations of the regular profession to the sick. Speaking of and for myself, the enormous extent of the traffic in proprietary medicines, and the patronage given to irregulars, have been a spur to me all my professional life to make myself a safer and more trustworthy guide in sickness to-day than I was yesterday. Advancing age, and its consequent experience, have had something to do with my own progress, if I have made any, in my thirty years of professional life. I have had many very useful hints, suggestions, and instruction from others, few of whom were, however, connected with the staffs of great or small hospitals.

Hospitals ought to do the duty through their staffs, you point out; but the truth is, they have not in the past, and are not doing so now. In my time, and so far as I can read history in the past, progress in medicine originates in the study, or rather the studies, of private practitioners. Hospitals have sometimes settled unsettled points of administration. They have settled many points in physiology and morbid anatomy. But, I apprehend, everything which post-mortems, by unassisted vision, can settle, has been settled long since, and now needs no repetition, except for the instruction of novices. Many points in physiology need further investigation with assisted vision, but I believe that, since the publication of the recent elaborate works on histology, the limit of useful discovery is nearly reached in that direction.

The path of real progress in medicine, it seems to me, lies in arranging the accumulated facts in the several departments of medicine in a plan or science of life. Aimless and pointless "experiments" with "drugs and medicines" will contribute little of value to the coming science of life, except to weed out needless therapeutic measures; and this they can do much less perfectly as empirical experiments, than with a well-defined purpose and end, in a science of life.

So far from medical reforms and medical progress originating in and radiating from the staffs of hospitals, they obey the law common to all other progress in knowledge and reforms, and originate on the outer borders, with those who come in contact with their fellow-beings in private life,—the general practitioners.

The educated classes in civilized life have, in many instances, outgrown medical philosophy as it exists to-day. They look for the same definiteness in medicine that they find in other departments of human knowledge. The irregular practitioner and proprietary medicine vendor proffer them this definiteness in their "theories" of disease and cure, and obtain enormous patronages, and accumulate wealth. The number of those who become dissatisfied with regular medicine is always large enough to supply them material upon which to ply their trade.

In medical centres, medical progress, except in limited directions, is effectually barred by medical ethics. Whoever attempts to teach in a medical centre, must teach up to the standard of the text-books. Any departure of moment would forfeit his standing in the profession,—he has violated medical ethics. To teach, he must found a new "school" of medicine. The direction of progress recognized by the ethics of the profession is "observation" and "experimentation." If an attempt is made to deal with the results of observation and experiment by the only other mode by which the boundaries of knowledge are enlarged, viz., abstraction, the ethical fingers of the profession beckon him to desist, or he will lose caste. In truth, the channels of professional education are full, and any material change in any department would mean new men at the front. There are, therefore, many reasons for preserving the *status quo* of the profession in medical centres, not least among which is "Nestor's" admonition not to attempt innovations, or "bread and butter" will be lost. Medicine of to-day is encumbered with a nomenclature and ideals which cannot be carried forward into a science of life. Much of its nomenclature is hoary with age, some of it blended intimately with superstition or tradition, and cannot now be used to designate or represent exactness. Definitions of many of the terms have been modified from time to time, to correspond with the changed and changing knowledge or "views" of the things or processes they are intended to represent, until their original sig-

nificance has been lost. This applies to written definitions. Despite this, the old significance is the prominent thing carried forward, orally and mentally. Inflammation and tubercle are instances of these attempted modifications of meaning.

There are, however, some significant signs from influential quarters, looking towards the employment of "logical" methods of investigating life-phenomena. Thus, Prof. Flint,† under the cover of discussing "the contagiousness and non-contagiousness of disease," presents a plea for the use of "logical" methods of dealing with certain "accumulated facts" of life; that is, "abstraction." True, portions of his paper would not bear the touch of logic, for he speaks of "disease" in the old sense, as something tangible, real, and distinct from the living body. And that is the conception of ninety-nine hundredths of the people, and probably the profession, including irregulars. But it is, perhaps, needful to mingle the old and new in this confusion, to obtain a hearing.

This mania, if I may so speak, for experimentation and observation, on the part of the profession, reminds me of a patient to whom I was administering chloroform some years since. Her breathing and pulse gave me timely warning of danger, yet, whenever consciousness returned, she would call out lustily for "more chloroform." So it is with the profession; though overwhelmed with facts, the cry is still, "Give us more facts." It is pleasant to know that what is wanting is not new facts, but the arrangement and classification of those already made out, in the framework of a science of life. I say framework: for a complete science of life, whose chief factors are motion of matter, or motion by matter, will never be attained. A thing complete would be only a system, like homœopathy, hydropathy, etc., etc.

The lines to guide future investigation, whether by experimentation, observation, or abstraction, are laid down definitely and sharply in the brief introduction to an authority second to none in the profession.‡ And, to my mind, there are now no essential facts wanting to construct a science of life, with places for all the new facts which present and future investigation will continually bring to light. The adoption of such a scheme will, or should, limit unnecessary observation and experimentation. For, when a point is once demonstrated, that ought to put an end to investigation concerning it.

The missing link needful to connect in harmony all the results of past investigation, is the function I have assigned to the lymphatic system.§ Its use, or physiological function, was arrived at by induction,—abstraction,—and bears the severest tests of the "logical" methods of Prof. Flint in dealing with the problem. It seems to me past "hospital reports" may, without injustice, be placed with the volumes you so recently pronounced as ranking *zero in worthlessness*, for each contains some valuable matter.

"Hospital Reports," if got up with reference to the lines of investigation laid down by Rindfleisch, may be placed alongside of that which you designated *acme of excellence*. In the educated popular mind, the profession—regular profession—has but an equivocal standing. Witness the onslaught on it, on a recent occasion, by certain influential secular and religious journals in the cities of New York and Cincinnati. Medical literature was branded by the *Cincinnati Gazette* as "medical balderdash;" while equality in public practice was claimed for homœopathy in New York and Brooklyn, on the score of equal fitness for the service.

These now at best lukewarm friends will become warm friends when the logical test is applied by the profession in dealing with the facts of life,—not before.

ZANESVILLE, OHIO, February 16, 1874.

Z. COLLINS McELROY.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

A CONVERSATIONAL meeting will be held March 25, 1874, at 8 o'clock P.M., at the hall of the College of Physicians. Dr. William Pepper will read a paper on the "Diagnosis and Treatment of Pleural Effusions." All regular practitioners of medicine are invited.

## OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM MARCH 10, 1874, TO MARCH 16, 1874, INCLUSIVE.

RANDOLPH, JOHN F., SURGEON.—Relieved from duty with Sioux Expedition. S. O. 35, Department of the Platte, March 11, 1874.

BILL, J. H., SURGEON.—Granted leave of absence for thirty days. S. O. 55, Military Division of the Atlantic, March 12, 1874.

O'REILLY, ROBERT M., ASSISTANT-SURGEON.—Assigned to duty with Sioux Expedition. S. O. 35, c. s., Department of the Platte.

† New York Medical Journal, February, 1874.

‡ Rindfleisch, Pathological Histology, New Syd. Soc., 1872.

§ Philadelphia Medical Times, January 31, 1874.

\* Philadelphia Medical Times, February 7, 1874.